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EXAMINER	
BEHM, HARRY RAYMOND	

ART UNIT	PAPER NUMBER
2838	

NOTIFICATION DATE	DELIVERY MODE
11/19/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/575,771	SCHETTERS, CORNELIS JOHANNES ADRIANUS	
	Examiner	Art Unit	
	HARRY BEHM	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6 and 12-15* is/are allowed.

6)☒ Claim(s) *1,2 and 7-11* is/are rejected.

7)☒ Claim(s) *3-5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 10/8/09 have been fully considered but they are not persuasive. Applicant argues Balakrishnan (US 6,813,169) and Saleh (US 4,353,114) do not teach it would be desirable to combine the references. However, both references pertain to the analogous art of power conversion and one of ordinary skill at the time of the invention would understand the benefits of filtering and how to implement known filters. In contrast to Applicant's arguments, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In re Keller, 642 F. 2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In this regard, a conclusion of obviousness may be based on common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference. In re Bozek, 416 F .2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). One of ordinary skill would have recognized the desirable properties of the filtering taught by Saleh to bi-directionally filter noise from the source and to prevent noise from being reflected back to the source.

Applicant further argues the modification undermines the purpose of the main reference to reduce the complexity of the input EMI filter. To support this 'teaching away argument' Applicant relies on the embodiment depicted in Figure 2. This argument is

unpersuasive since Applicant relies on the wrong embodiment. The Balakrishnan reference ('168) discloses multiple embodiments. The rejection relies on the teaching of the pi filter in the embodiment depicted in Figure 1 and the teaching of the plural inductors taught in the embodiment depicted in Figure 6, and does not rely upon the teaching of embodiment 2. The ('168) reference teaches "The input EMI filter circuitry is coupled in a configuration that is known as a pi filter, which can be appreciated to one skilled in the art" (Balakrishna 168 column 2, lines 38-40) and "one of the inductors 602 and 604 could be designed specifically to have different impedance versus frequency characteristics than the other in order to filter specific EMI frequencies more efficiently" (Balakrishnan '168 column 5, lines 54-57). The Balakrishnan reference ('168) explicitly teaches implementing a pi filter after the half-wave rectifier as shown in Figure 1 and also teaches the implementation of multiple inductors in a pi filter to filter specific EMI frequencies as depicted in Figure 6.

Furthermore, one of ordinary skill in the art would have recognized the benefits of filtering and would have been motivated to customize the implementation for specific applications, such as for noisy or sensitive loads or sources.

Where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. 103(a). Ex Parte Smith, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007) (citing KSR v. Teleflex, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)). Accordingly Applicant claims a combination that only unites old elements with no change in the

respective functions of those old elements, and the combination of those elements yields predictable results; absent evidence that the modifications necessary to effect the combination of elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a). Ex Parte Smith, 83 USPQ.2d at 1518-19 (BPAI, 2007) (citing KSR, 127 S.Ct. at 1740, 82 USPQ2d at 1396. Accordingly, since the applicant[s] have submitted no persuasive evidence that the combination of the above elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a) because it is no more than the predictable use of prior art elements according to their established functions resulting in the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

With respect to Claim 7, Applicant argues the reference Balakrishnan ('514) does not teach an integrated power transistor capable of smoothing a half rectified signal. However, integrated circuits were well known in the art, as was half-wave rectification

and one or ordinary skill would have been motivated to integrate the circuit in order to reduce the size and cost. One of ordinary skill in the art would have been capable of applying circuit integration to half-wave rectification circuits and the results would have been predictable to one of ordinary skill in the art.

With respect to Claim 2, Applicant argues one would not routinely experiment with non-electrolytic values. However, 100nF is a standard value in non-electrolytic capacitors and it would not have been innovative to implement a typical capacitive value.

With respect to Claim 8, Applicant argues the reference TEA152X does not teach a single diode rectifier. However, reference ('168) teaches a single diode rectifier and the rejection does not rely upon reference TEA152X teaching a single diode rectifier. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (US 6,813,168) in view of Saleh (US 4,353,114).

With respect to Claim 1, Balakrishnan discloses a power converter (Fig. 6), comprising an input circuit having a rectifier (Fig. 6 600) configured for receiving a full-wave AC signal (Fig. 6 102) along a first conductive path (Fig. 6 600-602) and a second conductive path (Fig. 6 604), the rectifier including a single diode rectifier (Fig. 4B) and a switched mode power supply IC (Fig. 6 208) arranged to receive the DC voltage output (Fig. 6 106) from a filter (Fig. 6 602-604). Balakrishnan remains silent as to the switch mode power supply being integrated and the filter comprising a non-electrolytic capacitor.

Saleh teaches a converter with an integrated circuit (Fig. 1B 10) with a π filter (Fig. 1A C41 ,C42,C45,C46 and L1) with non-electrolytic capacitors (Fig. 1A C41 ,C46) connected in series with the input and across the first (Fig. 1A X) and second conductive paths (Fig. 1A Y), that includes a conductive impedance element (Fig. 1A L1) connected in series with the non-electrolytic capacitor (Fig. 1A C41 and arranged to extend the second conductive path to common (Fig. 1A GND symbol), the filter providing a DC voltage output (Fig. 1A voltage C45). It would have been obvious to one

of ordinary skill in the art at the time of the invention to power a switch mode power supply integrated circuit from a filter with non-electrolytic capacitors and a conductive impedance element after diode D1. The reason for doing so was "integrated circuits are now available which carry out most of the incremental signal (control) functions required therein. Such integrated circuits offer substantial cost reductions in the design of the converter" (Saleh column 1, lines 42-47) and "This filter assures a relatively steady voltage at the converter and prevents voltage ripple at the converter from being reflected back to the source" (Saleh column 3, lines 39-44).

With respect to Claim 2, Balakrishnan in view of Saleh disclose the power converter as claimed in claim 1, and remain silent as to the capacitive value of the non-electrolyitic capacitor. It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the capacitance of the non-electrolytic capacitor as about 100nF. The reason for doing so was 100nF was a well known and common value for a non-electrolytic capacitor and one of ordinary skill in the art would have been able to select a capacitance of a filtering capacitor.

See MPEP 2144.05 II. OPTIMIZATION OF RANGE

A. Optimization Within Prior Art Conditions or Through Routine Experimentation
Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454,456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed

elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and In re Geisler, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (US 6,813,168) in view of Saleh (US 4,353,114) and further in view of Balakrishnan (US 6,525,514) .

With respect to Claim 7, Balakrishnan in view of Saleh disclose the power converter as claimed in claim 1, wherein the DC voltage output of the filter is applied to a series connection of a primary winding (Saleh Fig. 1B I), the switched mode power supply IC power transistor (Fig. 1B Q42), and a resistor (Fig. 1 R59). Balakrishnan ('168) in view of Saleh do not require the power transistor be integrated into the switch mode power supply integrated circuit.

Balakrishnan ('514) teaches a switch mode power supply integrated circuit (Fig. 1 139) in which the power transistor is integrated into the integrated circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to integrate the power transistor into the switch mode power supply integrated circuit. The reason for doing so was to reduce the size and cost as was well known at the time of the invention.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balakrishnan (US 6,813,168) in view of Saleh (US 4,353,114) and further in view of the TEA152x family data sheet by Philips.

With respect to Claim 8, Balakrishnan in view Saleh disclose a power converter as set forth above and do not disclose the gain of the feedback loop. It would have been obvious to one of ordinary skill in the art at the time of the invention to power the Philips IC TEA1520P with the half wave rectifier and pi filter. The reason for doing so was the TEA1520P "is a Switched Mode Power Supply (SMPS) controller IC that operates directly from the rectified universal mains. It is implemented in the high voltage EZ-HV SOI process, combined with a low voltage BICMOS process. The device includes a high voltage power switch and a circuit for start-up directly from the rectified mains voltage" (TEA 152x family data sheet page 2).

With respect to Claim 9, Kayser in view Saleh and the TEA152x Datasheet disclose a power converter as set forth above wherein the high gain feedback loop includes a multiplier arranged to diminish ripple caused by the non- electrolytic capacitor.

With respect to Claim 10, Kayser in view of Saleh and the TEA152x Datasheet disclose a power converter as set forth above wherein the multiplier is a factor 10 multiplier.

With respect to Claim 11, Kayser in view of Saleh and the TEA152x Datasheet sheet disclose a power converter as set forth above, wherein the switched mode power supply IC (Fig. 2 20) includes an internal start-up circuit having a high-voltage start-up

current source and without provision of any dissipative bleeder resistor [inrush resistor external to IC].

Allowable Subject Matter

Claims 6 and 12-15 are allowed.

Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

See the action dated 7/14/09 for reasons for allowance and reasons for indicating allowable subject matter.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HARRY BEHM whose telephone number is (571)272-8929. The examiner can normally be reached on 7:00 am - 4:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Lewis can be reached on (571) 272-1838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry Behm/
Examiner, Art Unit 2838